

U.S. Patent Application No. 10/019,995
Amendment dated December 27, 2004
Reply to Office Action of July 26, 2004 and Advisory Action of October 28, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A preparation comprising a cell extract for cell-free protein synthesis prepared by substantially excluding ~~an~~ all endosperm ~~portion~~ of said cell extract, thereby substantially excluding the systems involved in inhibiting the cell extract's protein synthesis reactions.

Claim 2 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to Claim 1, wherein substantially excluding said systems involved in inhibiting the cell extract's protein synthesis reactions comprises treating said cell extract with a nonionic surfactant.

Claim 3 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to Claim 2, wherein the cell extract is further treated by using an acoustic wave in addition to said surfactant.

Claim 4 (currently amended): A preparation which contains cell extract for cell-free protein synthesis according to Claim 1, wherein the ~~inhibiting~~ excluding of said systems involved in inhibiting the cell extract's protein synthesis reactions serves to control deactivation of ribosomes present in said cell extract.

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Claim 5 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to Claim 1, wherein a substance is present which controls deadenylation of ribosomes characterized by excluding systems involving the inhibition of protein synthesis.

Claim 6 (currently amended): A preparation which contains cell extract for cell-free protein synthesis according to Claim 1, wherein the cell extract is from an embryo and said embryo is treated by adding nonionic surfactant and a substance controlling deadenylation of ribosome by excluding systems involving the inhibition of protein ~~synthesis~~ synthesis.

Claim 7 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 1, wherein said preparation can be stored in room temperature and which maintains biological functions of said cell extract.

Claim 8 (previously presented): A preparation containing cell extract for cell-free protein synthesis according to Claim 7, wherein the preparation is in dried form.

Claim 9 (previously presented): A preparation containing cell extract for cell-free protein synthesis according to Claim 8, wherein the preparation is formulated by freeze-drying.

Claim 10 (currently amended): A method for cell-free protein synthesis in a system which is capable of recovering the synthesized product protein, said method comprising the steps of

providing a reaction vessel containing raw material substances that participate in cell-free

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protein synthesis, the raw material substances including ~~utilizing the preparation of claim 1,~~
~~containing cell extract for cell-free protein synthesis, wherein a the reaction vessel used in the~~
~~system is prepared with~~ includes a carrier capable of molecular sieving,

carrying out cell-free protein synthesis to obtain a synthesized product protein, during
which synthesis the synthesized product protein is separated from the raw material substances by
differences in movement through the carrier ~~a material substance pertaining to the system is~~
~~developed with the carrier as a moving phase, and during the development the reaction of cell-~~
~~free protein synthesis is carried out, thereby obtaining the product, and~~

recovering the separated synthesized product protein.

Claim 11 (currently amended): A method for cell-free protein synthesis in a system which is capable of recovering the synthesized product protein, said method comprising the steps of

providing a reaction vessel containing raw material substances that participate in cell-free
protein synthesis, the raw material substances including the preparation of claim 1, and wherein
the reaction vessel utilizing the preparation of claim 1 containing cell extract for cell-free protein
synthesis, a reaction vessel used in the system is prepared by dialysis, includes a dialysis
membrane that separates the reaction vessel into a reaction phase and an external phase, and

carrying out cell-free protein synthesis, during which synthesis ~~a material substance~~
~~pertaining to the cell-free protein synthesis system and the synthesized product protein of the~~
~~cell-free protein synthesis reaction are~~ is produced in the reaction phase and is separated into the
external phase through the dialysis membrane, thereby obtaining the product and

recovering the separated synthesized product protein.

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Claim 12 (canceled).

Claim 13 (previously presented): A preparation containing cell-extract for cell-free protein synthesis, comprising an extract of wheat embryo obtained after subjecting a treatment including a process for washing the wheat embryo with nonionic surfactant to completely remove any endosperm contaminants from the wheat embryo, that a deadenylation rate of the wheat extract is 1% or lower, the dry preparation of the wheat embryo extract maintains stability under room temperature; and that in a continuous cell-free protein synthesis involving a replenishment of the substrate and other substances for protein synthesis using said wheat extract, the synthesis shows constant performance even in 24th hour after starting the synthesis and shows at least 1 mg/ml or higher in synthesis level in said 24th hour.

Claim 14 (canceled).

Claim 15 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 2, wherein substantially excluding said systems involved in inhibiting the cell extract's protein synthesis reactions serves to control deadenylation of ribosome.

Claim 16 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 3, wherein substantially excluding said systems involved in inhibiting the cell extract's protein synthesis reactions serves to control deadenylation of ribosome.

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Claim 17 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 2, wherein said preparation can be stored in room temperature and which maintains biological functions of said cell extract.

Claim 18 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 3, wherein said preparation can be stored in room temperature and which maintains biological functions of said cell extract.

Claim 19 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 1, further comprising a synthesized substrate, amino acid, an energy source, a surfactant, an ionic compound, or combinations thereof wherein said preparation can be stored in room temperature and which maintains biological functions of said cell extract.

Claim 20 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 5, wherein said preparation can be stored in room temperature and which maintains biological functions of said cell extract.

Claim 21 (previously presented): A preparation which contains cell extract for cell-free protein synthesis according to claim 6, wherein said preparation can be stored in room temperature and which maintains biological functions of said cell extract.

Claim 22 (canceled).

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Claim 23 (currently amended): A method of synthesizing protein comprising the steps of
providing raw material substances that participate in cell-free protein synthesis, the raw
material substances including using the preparation prepared according to of claim 1, and
carrying out cell-free protein synthesis in which the raw material substances participate to
produce a synthesized protein.

Claim 24 (currently amended): A method of synthesizing protein comprising the steps of
providing raw material substances that participate in cell-free protein synthesis, the raw
material substances including using the preparation prepared according to of claim 2, and
carrying out cell-free protein synthesis in which the raw material substances participate to
produce a synthesized protein.

Claim 25 (currently amended): A method of synthesizing protein comprising the steps of
providing raw material substances that participate in cell-free protein synthesis, the raw
material substances including using the preparation prepared according to of claim 3, and
carrying out cell-free protein synthesis in which the raw material substances participate to
produce a synthesized protein.

Claim 26 (currently amended): A method of synthesizing protein comprising the steps of
providing raw material substances that participate in cell-free protein synthesis, the raw
material substances including using the preparation prepared according to of claim 4, and
carrying out cell-free protein synthesis in which the raw material substances participate to
produce a synthesized protein.

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Claim 27 (currently amended): A method of synthesizing protein comprising the steps of
providing raw material substances that participate in cell-free protein synthesis, the raw
material substances including using the preparation prepared according to of claim 5, and
carrying out cell-free protein synthesis in which the raw material substances participate to
produce a synthesized protein.

Claim 28 (currently amended): A method of synthesizing protein comprising the steps of
providing raw material substances that participate in cell-free protein synthesis, the raw
material substances including using the preparation prepared according to of claim 6, and
carrying out cell-free protein synthesis in which the raw material substances participate to
produce a synthesized protein.

Claim 29 (currently amended): A method of synthesizing protein comprising the steps of
providing raw material substances that participate in cell-free protein synthesis, the raw
material substances including using the preparation prepared according to of claim 13, and
carrying out cell-free protein synthesis in which the raw material substances participate to
produce a synthesized protein.

Claim 30 (canceled).